ASHBY. (T. A.)

The Value of Laparotomy in the Diagnosis and Treatment of Minor Forms of Intra-abdominal and Intra-pelvic Diseases.

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THOMAS A. ASHBY, M.D.,

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THE VALUE OF LAPAROTOMY IN THE DIAGNOSIS AND TREATMENT OF MINOR FORMS OF INTRA-ABDOMINAL AND INTRA-PELVIC DISEASES.

By Thomas A. Ashby, M.D.,
Baltimore.

To one who will carefully study the history of laparotomy, no fact will be observed more conspicuously than the unwarranted prejudice this procedure has had to combat in the different stages of its evolution and growth to its present position of acknowledged usefulness as a surgical resource. Centuries of ignorance and fear had so walled-in the contents of the abdomen against attempts at an examination through an abdominal section, that, except in conditions requiring the Cæsarean operation, few surgeons were bold enough to incise the abdominal walls until the light of modern surgery began to dawn within the past 100 years. The history of the progress of this procedure—so familiar to all students of gynecological literature—I need not recite in this connection.

It will suffice the purpose I have in view, to assert the fact that the development of the procedure in question, to its present status, has largely resulted from the recognition and acceptance of two facts: *first*, that the peritoneum will safely tolerate surgical interference; *second*, that absolute cleanliness is imperative to success. The early struggles of the laparotomist was a continued contention with that huge bugbear—"the fear of the peritoneum." The contention ceased and

the fear vanished when the adoption of strict hygienic principles asserted themselves in the conduct of intra-abdominal work.

As one glances back over the many years of slow progress, harsh criticism, and exaggerated dread which this procedure experienced in contrast with its present cordial acceptance and recognized usefulness as an art and science, it is impossible to escape the conviction of the power of little things in determining great events. That a discovery so simple as the recognition of the ordinary principle of cleanliness, as applied to surgery, should be at the foundation of modern success in abdominal work, is no less startling than any other fact in science, which, when once made known, is simplicity personified.

To what are we to trace the great growth of this procedure in professional confidence, if not to the facts recited? One might suggest, to the combined experience of many workers. This fact is admitted in all its importance, but it seems no less true that an over-estimate of the danger of injuring the peritoneum and the under-valuation of the aseptic principle were the two great factors at work in retarding the progress of laparotomy as a legitimate surgical resource. The limitations of this procedure were for many years fixed by a professional opinion as unalterable as the law of the Medes and Persians.

That such opinions were founded on ignorance and a total misconception of facts is now too well known. Experience has proven that the limitations of laparotomy are only reached when it is positively shown that there is no advantage in diagnosis or in treatment to result from its employment. The procedure is an established surgical resource, admissible and valuable in exact ratio with the judgment, skill, and experience which call it into use for diagnostic and clinical purposes. Assuming that laparotomy is a surgical resource of largest application and utility, I may particularize in respect to its conditions of employment. I shall omit any

reference to those conditions in which the procedure is necessitated for the removal of intra-abdominal tumors plainly recognizable before the procedure is made use of. The limitations of laparotomy, it seems to me, proceed from those obscure intra-abdominal and intra-pelvic conditions which cannot be made apparent by ordinary methods of diagnosis and treatment. Take an undetermined intra-pelvic condition which resists all ordinary methods of treatment, which persists, worries, torments, and destroys all useful occupation and threatens to destroy the life of the patient: what plan of treatment shall be followed? In the given hypothetical case, every other method of diagnosis and treatment has been employed without advantage or profit. In such a case, does not laparotomy come within the indications as the only intelligent and conservative resource? I take it that those who have had an experience in abdominal work will at once assent to such a proposition. I need not tell men who work intelligently and with reputed skill in this field anything about the limitations of laparotomy, or concerning its value in diagnosis and treatment. I am chiefly concerned about those who undervalue the resources of this procedure, and who over-rate the gravity of its various steps. I do not wish to be understood as advocating the practice of the procedure under consideration by inexperienced men, nor, indeed, by experienced men without a full understanding of its necessity in a given case. The position I wish to advance is, that we have in laparotomy the only correct guide to the diagnosis and treatment of many forms of intra-abdominal and intra-pelvic trouble, which we are often in duty bound to employ if a curative result is sought in the management of such cases. It is admitted that in a number of these cases life is in no imminent danger. They may drag along months and even years of invalidism or semi-invalidism under ordinary methods of treatment. Such individuals are familiar to all gynecologists They, unfortunately, become in some instances walking

manikins passing from one physician to another until they have gone the rounds of one, or even more, large communities.

In the management of such individuals, the question constantly arises as to what shall be done to relieve the conditions observed. Whilst such conditions do not positively demand a laparotomy, they clearly indicate its admissibility as presenting the only intelligent method of determining the cause of the trouble and the only way of its removal. To those who have had a personal experience in abdominal work, it often happens that these individuals—reputed hysterical cranks by those who have zeal without knowledge—are suffering from obscure intra-pelvic conditions, which, when removed, restore them to comfortable health and useful occupation. One does not have to look far to find tubal and ovarian disease at the root of such conditions in numerous instances. The distress which chronic inflammatory troubles of the ovaries, tubes, and pelvic tissues occasion is too plainly written on the physical and mental life of such patients to be mistaken if one will carefully and honestly interpret symptoms. There is a large class of women struggling along under the physical and mental burden of intra-pelvic disease which could be restored to health and usefulness by the resources of laparotomy; and quite gladly would they avail themselves of its risks and incidents with ultimate hope of its advantages, did they fully comprehend the nature of the opportunity hidden from them. Whose fault is this? I answer, for the most part, it must be referred to a stolid conservatism upon the part of those members of our profession, who, having eyes, see not; having ears, hear not. The incredulity and prejudice which still hover over this procedure are amazing in the light of its modern revelations. Many intelligent men in the ranks of our profession need yet be told that laparotomy is not a *dernier ressort*, that it is *admissible* even as an *aid to diagnosis*.

This statement, I dare affirm, will pass unchallenged, for how many are there engaged in abdominal work who do not experience the chilling influence of a professional sentiment

which over-estimates the dangers of laparotomy and under-values the opportunities for careful and good work it presents? This sentiment is the offspring of a prejudice which comes down from the past in the form of a conservatism which our present experience has demonstrated to be at the very root of the most fatal forms of laparotomy work. One need only compare the statistics of former with present methods of abdominal work to demonstrate the vast difference in results and the influences which give rise to them. Such comparisons go to prove that it was not the abdominal section *per se* which lay at the root of these mortality statistics, but the conditions for which the section was undertaken to relieve, conditions which were allowed to assume the worst relations and influences toward the patient before interference was deemed advisable. Contrast, for example, an ovariotomy of half a century ago with the present procedure, and the cause of such differences in results is readily appreciated. Half a century ago ovariotomy was approached under the disguise of a *dernier ressort.* To-day, the prompt recognition of the tumor, its prompt removal before interferences have taken place, the clear and decisive details of the procedure for its extirpation, follow with such art and decision that every condition has been embraced which promises a successful issue.

It is this exercise of the art and science of surgery that has enabled Mr. Tait to complete 143 ovariotomies in consecutive order without mortality, and Mr. Bantock to record his eighty-sixth case with like results.

The principles applicable to a laparotomy for the removal of an ovarian cystoma should be enforced with equal diligence and decision when this procedure is necessitated in minor forms of intra-pelvic and intra-abdominal work.

The success of the procedure is determined in large measure by the gravity of the condition for which it was instituted, and if the operator has allowed this condition to assume its most aggravated form before venturing upon a laparotomy,

he has, by this course of action, increased the risk of the section.

If the section has been made simply to aid the diagnosis, it becomes, in the hands of the skilful operator, a procedure with the slightest degree of casualty. Indeed, experience goes to show that a simple abdominal section should have no mortality. It may be approached without hesitation, if the operator has a trained experience. The results of an exploratory section are insignificant upon the subsequent health of the patient. The worst result that can befall her, in case of recovery, is a possible abdominal hernia, a sequela of growing infrequency. Laparotomy, as an aid to diagnosis, assumes a graver significance when the condition it reveals demands operative interference. The inspection admits of a more intimate and accurate study of the intra-abdominal condition, and necessitates a decision as to the plan of treatment to be followed. One of two facts is also made clear, viz., that the condition found did or did not justify the section. In the first event the clear course is to proceed to remove the offending trouble, and thus convert the simple section into the graver procedure. The second necessitates the closure of the wound without further interference. The logic of the question involves no other decision than the one practically reached, viz., that a simple section as an aid to diagnosis is indicated when the condition it reveals calls for operative interference to secure its removal; and, on the contrary, a failure to find just ground for further operative interference imposes no greater recourse than a closure of the wound. Whichever way these facts are viewed, there seems just ground in having recourse to a laparotomy when obscure intra-abdominal symptoms cannot be traced to their proper cause, and cannot be removed by other methods.

In advocating the advantages of laparotomy for minor intra-abdominal and intra-pelvic troubles, I would not be understood as opposed to any judicious and conservative opinion which would, properly speaking, contraindicate this

procedure. I have no desire to advocate a method which is not sustained by sound logic, intelligent judgment, and reliable experience. A trained experience, a clear judgment, and a due sense of personal responsibility alike forbid an unnecessary resort to a surgical expedient, but the exercise of these same faculties will, in like manner, enforce a recourse to legitimate surgical methods when such methods are clearly demanded.

The high aim of the art and science of surgery is to relieve human suffering through its instrumentality only when it is clearly shown that relief cannot be purchased by other less severe methods. We may, therefore, claim that laparotomy, as a surgical expedient, should fulfil this requirement. This view of its scope and limitations removes every danger of its unnecessary employment in the hands of the carefully trained and experienced surgeon who has given honest study to its claims and advantages. But it can be shown that in surgery, as in fashion, custom often prevails. We are often in danger of losing the advantages of a surgical process by reason of a disparagement of its claims, or by failure to appreciate the complete benefit it may confer. It is from this standpoint that I contend for laparotomy in minor conditions. Placing a just estimate upon its dangers, may we not prove its value in a larger range of conditions as a curative measure—as it were, superseding the more conservative methods which at best aim chiefly to palliate serious troubles?

Those intra-abdominal and intra-pelvic conditions which I shall classify as minor troubles are observed under a number of symptoms and expressions. They are: I., inflammatory; II., structural—(*a*) morbid growths, (*b*) ectopic pregnancy; III., neuralgic; IV., changes of position; V., hemorrhagic.

I. Inflammatory.

Under this class are embraced a number of conditions which at times clearly demand a recourse to surgical methods through

this procedure. Chief among these conditions stand tubal and ovarian inflammations. The recognition of salpingitis as a precursor of pelvic cellulitis and pelvic abscess has made marked progress in very recent years. Experience, now rapidly accumulating, goes to show that the older views of pelvic inflammation need reconstruction in numerous instances. There are few who will question that we are reaching a more correct view of pelvic abscess by an acceptance of the doctrine of primary tubal inflammation as the *fons et origo* of all such troubles. If the fact has not yet been proved to the satisfaction of all students of this subject, I venture to assert that the future study of this question will show that pelvic cellulitis and subsequent pelvic abscess *in initio* originate through tubal infection by continuity of mucous membrane—not by processes as have been taught—in a much larger percentage of cases than is now admitted. One need only study the clinical and pathological history of salpingo-ovaritis to realize the close causative relation it sustains to pelvic inflammation and pelvic abscess—the general conflagration of intrapelvic trouble established through this focus of inflammable material.

The tubal mucous membrane offers the most fertile soil for the development and extension of the inflammatory and septic processes, and what route can be more favorable than the one actually chosen for the extension of these processes, so long recognized as having their origin in the uterine mucous and parenchymatous tissues? Whilst by no means denying the extension of such inflammation through the blood and lymph channels from the uterine to its investing layers of tissue—cellular and peritoneal—one may pertinently ask whether we have not in the past exaggerated the importance of this route, and referred to this source numerous cases in which the inflammation had followed the more natural course by the epithelial route.

Upon an acceptance of this view of the origin of pelvic inflammation and pelvic abscess the door is opened to the treat-

ment of these conditions by a route more direct and more radical, but more efficient and curative in its aim and results. If it be possible to nip such processes in the bud, as it were, and thus remove the offending trouble by an abdominal section, such a procedure seems not only admissible but clearly demanded. Whilst by no means holding that every case of pyosalpinx or pelvic abscess justifies an abdominal section, I do hold that the success of the usual palliative methods of treatment of such conditions is soon demonstrated, and the point will be reached in a number of such cases when the abdominal section is indicated and demanded. Experience will show the limitations of the palliative methods, and we have only to subject this experience to the test of careful observation to establish a line calling for interference through an exploratory section.

Just here the profession may arrange itself in two opposing lines. One sect may insist upon the ultra-conservative method and by a system of non-interference and belief in antiquated views, deny the advantages of the exploratory section. The other sect may hastily interfere and resort to the section in undue confidence, and in disregard of a rational and conservative observation. Between these extremes of opinion there is a safe ground which every prudent surgeon will seek. It is from this position that a surgical procedure should originate. When this due consideration has been given to such intra-abdominal conditions, the claims and advantages of laparotomy will assert themselves, and the procedure may be approached with every confidence.

Apart from tubal pus accumulations and pelvic abscess, the chronic forms of ovarian and pelvic inflammation present, in numerous instances, indications for laparotomy which are not infrequently unheeded. The results of such chronic inflammations are made manifest in adhesions which restrain important organs, which interfere with normal mobility of pelvic tissues, which disturb the pelvic circulation, lymph stream and nerve supply, and impair nutrition. Such indi-

viduals, at times, enjoy the worst forms of physical and mental health. As a rule, they have exhausted the benefits conferred by hot water, pessaries, suppositories, opiates, and other forms of medication. Are not such individuals fit subjects for laparotomy? Experience now rapidly accumulating gives an affirmative answer to this question. The larger this experience grows, the wider seems the range for the employment of an abdominal section in these obscure and minor conditions. The door is thus opened for a more accurate and intimate study of the local lesion, and for its removal under proper indications.

In this connection, I may present the following case which serves to illustrate the position assumed in the foregoing remarks:

Case I.—Miss A. B., aged thirty-one, began to menstruate between fifteen and sixteen years of age. Dysmenorrhœa was early established, but as she grew in age her pains at each period grew more intense. For some years she bore this suffering with fortitude. Within the past five or six years prior to the date of my observation, the menstrual epoch induced such disorders that her nervous system was greatly disturbed and hysteria became pronounced. These symptoms increased from year to year, until the outbreak each month became more and more violent, finally resulting in attacks of hystero-epilepsy at the beginning of each period, and often at intervals during the period. When consciousness was not lost in an epileptic seizure the hysterical outbreak was very pronounced. During the inter-menstrual period she suffered from frequent lancinating and stabbing pains in the pelvis, and more or less backache. The dysmenorrhœa was intense, and required the use of anodynes and antispasmodics for its control. For the past two years the week of menstruation was passed in bed or in idleness, all useful employment being suspended in consequence of pain, hysteria, and hystero-epilepsy.

A physical examination revealed no uterine or ovarian condition to account for the distress experienced. Every rational method of medication was employed without material benefit. (The operation of divulsion was practised with negative results.) After eighteen months of palliative treatment and no result, I

advised a laparotomy, which was not only accepted, but urged by the patient. I should say that her nutrition and general health were good. Three weeks out of four were passed in fair degree of comfort and usefully employed.

Physical condition. An abdominal section was made on Nov. 10, 1887, with a view to diagnosis and treatment. The right ovary was found firmly adherent to the brim of the pelvis, and in a condition of chronic inflammation. The tube was enlarged, but contained no pus. Left ovary quite small, apparently atrophied. No other intra-pelvic disease was made out. Both ovaries and tubes were removed. The patient made a prompt recovery from the operation. The effect upon her subsequent health was marked. The hysterical attacks ceased, and the hystero-epilepsy did not occur for over nine months subsequent to the operation. Within the past year she has had a return of some pelvic pain and several hysterical attacks. The pain at the menstrual period disappeared, and menstruation ceased until the third month after the laparotomy; it then returned for three months, and again disappeared for some months, her health during this time being better than since the age of sixteen years. Menstruation reappeared in the fall of 1888, and has continued more or less since. The cause of this phenomenon I am unable to account for, as no present condition of her uterus has offered a satisfactory explanation.

II. Structural Tissue-changes.

(*a*) Morbid Growths. (*b*) Ectopic Pregnancy.

1. Morbid Growths.—Under this head, attention is directed to minor forms of intra-abdominal disease which assume the character of structural changes, the offending trouble assuming the form of a morbid growth, not recognizable by ordinary methods of examination, but revealed by abdominal section. As to the frequency of such conditions, I am in no position to affirm, but that such pathological changes are productive of grave symptoms I can testify to from personal experience.

That small ovarian and intra-ligamentous cysts do occasion

intense physical suffering, I think cannot be denied. Small fibro-myomas connected with the uterus may occasion similar disturbances. By mechanical pressure upon nerves, blood-vessels, or important organs they create symptoms out of all proportion to their size and apparent importance. The following case, which I reported, one year ago, as an admission thesis to this Society, with comments, under the title, "Laparotomy for Ascites," is repeated in this connection as an illustration of the position assumed as justifying an abdominal section as an aid to the diagnosis and treatment of a grave intra-abdominal condition dependent upon a small fibro-myoma which was undetermined prior to the laparotomy:

Case II.—Miss H., aged nineteen, enjoyed good health up to January 1, 1888. She was plump, well-nourished, and regular in her menstruation. Her period came on as usual in January, but she noticed that the flow was more profuse and lasted longer than was her habit. This occasioned some weakness, not enough to suggest medical treatment. Her menses during the months of February and March were in advance of the usual time, the inter-menstrual period being shorter than normal; the flow continued a greater number of days and was more profuse. She now began to experience a sensation of heaviness and dragging down in her pelvis, entirely foreign to any previous sensation. During the months of April and May menstruation was continuous, and her general health began to suffer. About May 1st, her abdomen was observed to be somewhat enlarged. On May 23d, the enlargement had increased to such an extent, and her health was so depressed, that the family physician, Dr. Arthur Williams, of Elk Ridge, Md., was called in. Upon examination Dr. Williams obtained the history previously given, whilst a physical examination revealed the abdomen to be markedly distended with fluid, and disclosed a tenderness over each ovarian region. The patient's appetite was good, spirits cheerful, and general condition indicated no serious organic trouble. Her heart, kidneys, and liver were examined, and nothing found in these organs to account for the ascites. The patient belonged to a tuberculous family on both sides of her house, and she had

formerly been troubled with cough, but her lungs presented no physical signs of structural disease.

On June the 1st, Dr. Williams found it necessary to perform paracentesis abdominalis, her abdomen having become so enormously distended with fluid that relief was demanded. The effusion had shown no disposition to disappear under the use of drugs. Two and a half gallons of ascitic fluid were removed at this time. An examination was again made by Dr. Williams with the view of ascertaining the cause of the ascites. The result was negative. Within a few days after the paracentesis, the effusion was again very apparent, and continued to increase rapidly each day. At the request of Dr. Williams I was invited to see the case with him on June the 5th, just five days subsequent to the paracentesis. I found the abdomen considerably distended with fluid at this time. I gave the patient as thorough an examination as circumstances would admit of, and I was forced to agree with Dr. Williams that the origin of the effusion was involved in profound doubt, but we mutually agreed that it was most probably due to some local cause in the pelvic or abdominal cavity, which could only be ascertained by an exploratory laparotomy. The uterus was depressed in the pelvis, but it was normal in size and shape. The ovaries could not be made out, and consequently no enlargement of these organs was detected. The abdominal walls were thick, and now distended with fluid, preventing a searching examination by internal and external manipulation. With the history of a tubercular diathesis, the possibility of a tubercular origin of the fluid was considered, but the facts in the case did not seem to sustain this view. That the effusion was not a result of an acute or chronic peritoneal inflammation the history fully showed. Having eliminated every source of doubt as to the origin of the effusion from such causes as cirrhosis, heart and kidney diseases, we were forced to refer the cause to some condition which an examination by the present methods employed had not made clear. The continued menorrhagia had induced me to look to ovarian or uterine disturbance as a probable seat of the trouble. With grave doubt as to the real cause, but with strong conviction as to the necessity of ascertaining the same with a view to its possible removal, the importance of an

exploratory laparotomy was strongly urged upon the patient and her friends as the only rational and practical solution of the trouble. The risks of the procedure and the possibility of negative results were carefully stated, but it was argued that, if the cause could be found and then removed, recovery might follow. On the contrary, to decline the procedure left only an aimless fight with diuretics, hydragogue cathartics, and the trocar, and doomed the patient to a life of invalidism, and possibly to an early death. These facts were taken into consideration by the patient and her friends, and a decision was soon reached. I was courteously invited by Dr. Williams to do the operation on June the 10th. With the assistance of Dr. M. G. Smith and Dr. Thomas Buckler, of this city, and Dr. Williams, the operation was undertaken under strict aseptic precautions. An incision was made through the abdominal walls, permitting the escape of some three gallons of ascitic fluid (estimated). The fingers were then introduced, and a search made for the cause of the trouble. After a few minutes' search a tumor, about the size of a hen's egg, was found with a mass of intestine packed in the pelvis behind the uterus. Slightly enlarging the incision to admit of the introduction of the hand, a full sweep of the pelvis was obtained and both ovaries were found. The left was small, and apparently atrophied; the right had undergone partial cystic degeneration, and was about the size of a billiard ball. In an attempt to bring it through the incision its thin walls gave way, and its contents escaped into the abdomen. The ovary and tube of the right side were removed. The tumor first mentioned was solid, a fibro-myoma, without a pedicle, and was enucleated out of its attachments by the fingers. It seemed to spring from the folds of the left broad ligament, but its exact anatomical relations could not be determined, nor its position clearly made out. This tumor is believed to have been the cause of the ascites; it had evidently pressed upon an important vessel and occasioned a transudation. A continued search failed to elicit any other condition which could explain the ascitic trouble. I had no hesitation in stating that I believed the cause had been found and removed, and that if recovery followed the laparotomy the ascites would not recur. Subsequent events have verified this state-

ment. The abdomen was next carefully closed. The wound healed by primary union throughout. The highest temperature reached was 100°, on the second day. It then subsided to 99.5°, and after the fourth day was only one-half degree above normal. The patient recovered without a bad symptom, and now at the end of one year is strong and well, without a return of the ascites. The case is of interest from the fact that such an apparently trivial cause should have given rise to such a large effusion in so short a time. From May 1st to June 1st, over two gallons of ascitic fluid had formed and had been removed, whilst from June 1st to June 10th, over three gallons had accumulated within the abdomen. The result clearly justifies the means employed; but in all such cases where the cause of ascites cannot be ascertained except by laparotomy, such an experience as the foregoing seems to warrant a recourse to it.

2. Ectopic Pregnancy.—The study of ectopic pregnancy, within recent years, has developed the most dependent relation of this condition to laparotomy. Whatever views were formerly entertained as to the origin, form of development, and treatment of this condition, such views have materially altered since the procedure under consideration came into vogue in the treatment of this condition. We stand to-day in the midst of a complete revolution concerning the management of ectopic gestation, and one need only interpret the handwriting on the wall to declare the ultimate outcome of this revolutionary action. It is nothing short of a complete verdict in favor of primary laparotomy the earliest moment the condition is strongly suspected or clearly recognizable. The advantages of such a course, over methods hitherto recognized, seem unanswerable when ectopic pregnancy has been declared; and even prior to the positive confirmation of this condition by ordinary methods of diagnosis, we may safely question whether an abdominal section does not present the most practical and advantageous method of diagnosis having in view a positive indication as to the plan of treatment to be adopted. Those who over-estimate the gravity of

abdominal section, naturally repose confidence in the use of electricity. Admitting that the method of electrolysis is reasonably safe and efficient in the early months of gestation, it can have no preference over laparotomy after a diagnosis has been established. A doubt must remain as to the value of electricity prior to the establishment of the diagnosis, for this agent is of necessity called into exercise in the most empirical manner in the absence of a positive condition.

Viewing the two methods from a rational standpoint, it seems to me, that in experienced hands the laparotomy occupies a higher ground as a legitimate resource, and, therefore, enjoys a superior claim to other expedients. To assume that electricity is safer than laparotomy upon any other ground than that of acknowledged experience, is a simple begging of the question. Such an assumption necessitates its employment upon unscientific terms and in a most hap-hazard manner. I would not assert as an infallible dictum that laparotomy for ectopic pregnancy, prior to rupture of the fœtal sac, is a *sine qua non*, but I do assert that its claims are rapidly growing into professional favor for this condition, in its primary as well as secondary manifestations, and that we are in duty bound to listen to the experience which its results have established. The time is near at hand, if it has not already arrived, when laparotomy must be regarded as the most rational and efficient method of dealing with ectopic gestation in the very earliest months the condition is declared.

III. Neuralgic Conditions within the Pelvis.

Under this head it is difficult to define the exact pathological lesion of which pain is the most formidable symptom, and vague neurotic disturbances the most distressing manifestation.

The influence of ovarian disturbances in the causation of hystero-epilepsy, hystero-mania, hysteria, and similar perturbations of the nervous system has received earnest attention

and study within recent years, and the indications for oöphorectomy in such conditions have been clearly pointed out and actually demonstrated.

I shall pass over the consideration of this subject and confine my remarks to one aspect of the question, viz., the indications for laparotomy in intense and persistent pelvic pain during menstruation and during the inter-menstrual period. The factors at work in the production of pelvic pain are not easily determined by ordinary methods of diagnosis. The pain cannot be traced positively in any number of cases to pelvic inflammation—acute or chronic—to displacements, or to the results of adhesive inflammations. Each condition may enter as a factor, or the symptom may have its origin in the nerve-supply of one or more of the intra-pelvic organs or tissues, having no reference to an appreciable lesion of the organ in question. The recognition of an ovarian dysmenorrhœa has referred to the ovary a special influence in the causation of pain. That the ovary is most frequently at fault in this system of pathology cannot be denied. We may seriously question whether the so-called mechanical and congestive varieties of dysmenorrhœa have not been exaggerated, and whether this symptom is not referable to ovarian neuralgia in a much larger percentage of cases than has been admitted.

This view of dysmenorrhœa admits of its successful treatment by laparotomy in properly selected cases. I am one of those who clearly believe in the use of the knife in such conditions when the circumstances and surroundings of the patient, her previous history and treatment, and other indications point to the desirability of a curative method of treatment. In such selected types of ovarian dysmenorrhœa it is a mere waste of time to trifle with palliatives. We may gravely propound the question of treatment by laparotomy when its solution is cheerfully made for us by the patient herself, when its advantages and disadvantages are clearly stated to her.

I was importuned for eighteen months by a patient, the victim of ovarian dysmenorrhœa and hystero-epilepsy (Case I.),

to remove her ovaries before I could obtain my own consent to institute the procedure. The failure, or rather delay, to apply the only legitimate remedy was my own and not the patient's; she has since often thanked me with tears in her eyes for the relief it brought her.

In the more severe forms of ovarian neuralgia the claims of laparotomy, it seems to me, demand more earnest consideration than has been given to them. With a more thorough study of intra-pelvic pain must come a more implicit reliance upon abdominal section as a curative measure. Time will show that we may safely have recourse to this procedure without incurring the charge of mutilating our patients unnecessarily. A condemned ovary to the breadwinner occupies no favorable consideration in her mind when told that the symptoms referable to its presence and function are removable at ordinary risk by its sacrifice.

Intra-pelvic pains, dependent upon displaced organs, adhesions, and chronic inflammations in certain cases call for the employment of abdominal section in no uncertain language. It is not necessary to particularize in respect to the indications, since the chief contra-indication is found in a fair and judicious employment of other methods prior to the adoption of the more hazardous operation.

IV. Alterations of Position of Intra-pelvic Organs.

The advantages of laparotomy for the correction of displaced intra-abdominal and intra-pelvic organs, not remediable by other methods, are now being fully appreciated by advanced workers in abdominal surgery. Procedures have been instituted for the correction of uterine, ovarian, and kidney displacements by the use of the abdominal section which have given extremely satisfactory results. Such methods of dealing with these conditions seem not only in keeping with an enlightened understanding of the capabilities of the art and

science of surgery, but present a practical illustration of the wide range for the application of surgical principles to rational and useful purposes. If in any one respect the art of surgery of to-day differs from that of the past, it is in its larger range and scope of application to minor conditions, the boundaries of which have not as yet been reached or defined. To Drs. Wylie, Polk, and Kelly, of this Society, and to other well-known surgeons, we are indebted for original work in this field which gives the promise of larger results than have as yet been obtained. The length to which this paper has grown does not warrant me in presenting any of the details of this work. I wish to place myself on record as being in full accord with the principles which invite the use of laparotomy in the furtherance of this character of original work.

V. Intra-abdominal and Intra-pelvic Hemorrhage.

It is only within the last decade that the surgical mind has come to appreciate the value of laparotomy in intra-abdominal hemorrhage from gunshot wounds and similar causes. Among the last triumphs of the genius of Marion Sims was the prompt, early, and earnest advocacy of the value of laparotomy in the treatment of penetrating wounds of the abdomen and abdominal viscera. In this, as in other things, Sims was in the very lead in thought and action, and could he have lived only a few years longer he would have witnessed the complete triumph of the principles and practice he so vigorously advocated. The results which have followed the method of dealing with concealed intra-abdominal hemorrhage by abdominal section have been so marked and so encouraging that no reasonable excuse can now justify a non-interference plan of treatment when the indications point to any serious injury of the abdominal viscera. In point of fact, in the largest number of such cases, the section offers the only correct plan of dealing with such conditions, and the surgeon who fails to employ

this plan is derelict in duty and hide-bound in his ultra-conservative methods.

As we approach the study of intra-pelvic hemorrhage, the indications calling for a laparotomy are less pronounced. Intra-pelvic hemorrhages are, as a class, less fatal than the variety previously referred to. They differ in degree, in location, and in their effects upon the patient, from a simple clot, with scarcely perceptible pain and shock, to the most fatal forms, terminating in profound collapse and subsequent death. Intra-peritoneal hemorrhage is generally regarded as one of the most alarming conditions which can befall woman, and its results are usually so overwhelming as to demand the most prompt and decisive course of action. The indications for laparotomy in this condition are usually pronounced and imperative. The success which has followed the adoption of this procedure in dealing with this condition has been so encouraging as to place the abdominal section in the front rank among remedial measures. It is doubtful whether the measures designed to control the flow of blood, such as cold, pressure and the like, are entitled to consideration when it is at all possible to open the abdomen, ligate vessels, and remove blood-clots. Opinions on this question differ, but the trend of opinion points, conclusively, to the importance of doing laparotomy in all forms of intra-peritoneal hæmatocele. As the diagnosis of intra-peritoneal hemorrhage from subperitoneal hemorrhage cannot be made with accuracy in all cases, the condition must often be treated symptomatically. This suggests and enforces greater or less delay in having recourse to a laparotomy. Where hemorrhage, shock, and symptoms of collapse are pronounced, the section at once claims a prompt recognition.

But it is not so much in this form of hæmatocele that I would urge the claims of laparotomy. The indications here are sufficiently pronounced. It is in those minor forms of hæmatocele in which pain, inflammation, and other evidences

of local distress are experienced, and in which the offending trouble is referable to a blood-clot not easily determined prior to the laparotomy. It is in the highest degree probable that small hæmatoceles occur with much greater frequency than was formerly supposed. Recent studies have shown the greater frequency of ectopic pregnancy, and as hæmatoceles are referred in largest measure to this influence by close observers, it is not unreasonable to assume that not a few of the temporary indispositions of women dependent upon pelvic disturbances are referable to this condition.

Small clots in the cellular tissue may be successfully disposed of after a few days of invalidism. Under other circumstances, they may remain to excite intense pelvic pain, provoke inflammation and abscess, or become the starting-point of septic processes. That even minor subperitoneal hemorrhages are not harmless, I think experience fully shows. The method of approaching these intra-pelvic symptoms through an abdominal section is, in my judgment, entitled to eminent consideration. The neglect to institute this procedure will, in certain cases, undoubtedly impose unnecessary physical distress upon such individuals and expose them to conditions and dangers not easily controlled in the subsequent progress of their troubles.

The following case is offered in illustration of this position:

Case III.—Mrs. D., aged twenty-five, married five years, mother of one child, aged four years. Health good up to February, 1889, and menstruation regular. Menstruation ceased in February and March. She suspected she was pregnant, but there were no other symptoms referable to this condition. The last of March she was seized with violent pain in the left ovarian region. Her family physician, Dr. George R. Graham, of this city, was called in, and upon examination detected a small movable tumor to the left of the uterus and very low in the pelvis. He suspected a tubal pregnancy, placed the patient in bed, gave anodynes, and kept a close watch over her case.

On April 9th, Mrs. D. was seized with violent pain in the region of the left ovary, which was followed by a slight collapse and shock. Her physician was called in, and found that the tumor had disappeared. Next morning menstruation reappeared, but pain continued. Ruptured tubal pregnancy was strongly suspected. I was invited to see the case in consultation, and after hearing her history was strongly in favor of the doctor's diagnosis. Chloroform was administered, and a thorough examination made. No satisfactory condition could be made out. There were some slight indications of a small movable tumor to the left of the uterus, deeply seated in the pelvis.

An expectant plan of treatment was advised, and the patient carefully watched for indications for interference. Through rest in bed the pain soon disappeared, and after a few days the patient was able to resume her domestic duties. She continued well until the first week in June. At this time violent pain returned in the left ovarian region, and her distress became so marked that anodynes failed to relieve it. This continued until June 10th, when I was again invited to see the patient. At this time a small but movable mass was felt in the left pelvic region. The patient had emaciated, was growing extremely nervous, and insisted upon some method of relief. After stating the probable cause of trouble, a laparotomy was proposed and promptly accepted. On June 11th, with proper assistance, I made an exploratory incision, and upon introducing the index-finger succeeded in finding a tumor mass in the pelvis to the left of the uterus. The incision was enlarged, and after some difficulty the tumor was brought into the field of vision. In attempting to draw it through the incision, the sac ruptured and several ounces of clear ascitic-looking fluid escaped. The mass was then drawn through the opening, ligated, and removed. It proved to be a blood-clot in the left ovary, partially ruptured into the folds of the left broad ligament. The clot was not larger than a walnut, but was enclosed in the cyst which I had previously ruptured. The patient made a prompt recovery, and was free from all pain within twelve hours after removal of the tumor.

The specimen was presented to Prof. W. H. Welch, of this

city, for examination. I have been unable to get Prof. Welch's report up to this date.[1] The gross examination gave no proof

[1] Since the foregoing remarks were made I have received the following report from Prof. Welch. The results of his examination are of such interest that I deem them worthy of a place in this report. The report reads as follows:

JOHNS HOPKINS HOSPITAL, November 1, 1889.

Examination of specimen of ovarian or tube-ovarian fœtation removed by Dr. Ashby:

The specimen when received had been hardened in alcohol so that some allowance for shrinkage must be made in the measurements given in this report. The specimen is composed of the lateral extremity of the Fallopian tube, the ovary, a sac containing blood coagula and fœtal membranes, and a unilocular cyst with the corresponding part of the ligamentum latum. These constituents form a single mass removed by cutting through the Fallopian tube, broad ligament, and adhesions. The Fallopian tube measures 12 ctm. in length. Its ovarian or fimbriated extremity can no longer be recognized, being lost in the wall of the fœtal sac and ovary. The lumen is obliterated after the tube becomes incorporated with its walls. The lumen in the remainder of the tube is patent and of normal dimensions. The remnants of old fibrous adhesions are present on the peritoneal covering of the tube. The ovary, the fœtal sac, and the altered ovarian extremity of the Fallopian tube form one continuous mass, the main part of which is composed of the ovary and fœtal sac. This mass measures 6½ ctm. in length, 4½ ctm. in width (antero-posterior), and 4 ctm. in third diameter, the whole mass being irregularly oval.

The outer layers of the ovary are continued into the outer wall of the fœtal sac. This sac, which has been widely opened, measures 3 ctm. in diameter, and projects from the uterine and superior part of the ovary. It is adjacent to a corpus luteum measuring 2 ctm. by 1 ctm., and presenting a festooned margin around a central blood-clot of yellowish-brown color. Microscopically the festooned margin presents the character and arrangement of cells usually found in corpora lutea. The walls of the fœtal sac average about 3 or 4 ctm. in diameter and present a cavity containing a large quantity of extravasated blood. In this extravasated blood and in the margin of the central cavity are present typical branching chorion villi, so unmistakable that there can be no doubt of their nature. No trace of the embryo itself can be found in the already opened sac. As a part of the wall of the fœtal sac, the ovary containing Graafian follicles, the before-mentioned corpus luteum, and microscopically numerous ova in abundance are present, measuring 3 ctm. in length and 15 mm. in width. As already mentioned, the lateral extremity of the Fallopian tube is lost in the wall of the sac and here the lumen disappears, not being continuous with the interior of the fœtal sac. There is a thin-walled unilocular cyst, already opened, lined by cylindrical epithelium provided with cilia, situated between the layers of the broad ligament and in contact with the Fallopian tube. This sac is 6 ctm. in diameter and appears to be a parovarian cyst.

DIAGNOSIS.—There is no doubt that the case is one of ovarian fœtation. It is not possible to exclude positively the participation of the wall of the tube in

of fœtal or placental tissue. The origin of the hæmatocele I am unable to determine. The relief which followed the laparotomy was so prompt and decided that its admissibility was placed beyond all doubt. An expectant plan of treatment would have conferred months of suffering and invalidism, and might have cost her her life. She was restored to health and usefulness within two weeks' time by the more radical but more efficient procedure.

Conclusions.

In the foregoing general considerations, I have attempted to present an argument in support of the advantages of laparotomy in the diagnosis and treatment of minor forms of intra-abdominal diseases, upon the assumption that the dangers of laparotomy have been exaggerated and its field of usefulness contracted by views of conservatism which have come down from the past and which have overestimated the gravity of this procedure. In advancing this statement I am in accord with that class of rising and distinguished abdominal surgeons who have entered and cultivated this field with marked originality and zeal. Where so many minds are at work in the same field of investigation, it becomes exceedingly difficult to assign absolute originality in every case. In many respects, intra-abdominal and intra-pelvic surgery have not passed beyond the experimental stage. There are numerous phases of intra-pelvic disease which continue to puzzle the conscientious worker. We can only hope to obtain reliable facts by individual effort and individual experience, which must, ultimately, assume proper relations to that which is best in method and in practice. Whilst the views which I present possess no originality, they represent an experience which may add to the general results we are all attempting to compile.

the formation of the sac containing the fœtal remnants, so that the case may be possibly a tubo-ovarian pregnancy. The parovarian cyst is without any relation to the extra-uterine fœtation. William H. Welch.